

**WHAT IS CLAIMED IS**

1. A gene encoding cyclic lipopeptide acylase, which comprises the entirety or a part of the following (a), (b) or (c):
  - 5 (a) a DNA consisting of the nucleotide sequence depicted in SEQ ID No. 1
  - (b) a DNA capable of hybridizing with the DNA of the above-mentioned (a) under stringent conditions
  - (c) a DNA having at least (1) 60% identity, (2) 70%  
10 identity, (3) 80% identity, (4) 90% identity or (5) 95% identity with the nucleotide sequence depicted in SEQ ID No. 1.
2. A gene encoding a protein of the following (a) or (b) or a part thereof:
  - 15 (a) a protein consisting of the amino acid sequence depicted in SEQ ID No. 2
  - (b) a protein having an amino acid sequence involving deletion, substitution or addition of one to several amino acid(s) in the amino acid sequence (a), which  
20 protein has a cyclic lipopeptide acylase activity.
3. A recombinant vector comprising the gene of claim 1 or 2.
4. An expression vector functionally comprising the gene of  
25 claim 1 or 2.
5. A transformant obtained by transforming a host cell with the vector of claim 3 or 4.
- 30 6. A method of producing cyclic lipopeptide acylase, which comprises  
culturing a host cell transformed with the expression vector of claim 4, and  
harvesting, from the obtained culture, cyclic lipopeptide

acylase capable of catalyzing a reaction to deacylate a side chain acylamino group of a cyclic lipopeptide substance into an amino group.

5 7. A cyclic lipopeptide acylase produced by the production method of claim 6.

8. A gene encoding cyclic lipopeptide acylase, which comprises the entirety or a part of the following (a), (b) or (c):

10 (a) a DNA consisting of a nucleotide sequence shown by nucleotide No. 1065 to 3359 in the nucleotide sequence depicted in SEQ ID No. 1

(b) a DNA capable of hybridizing with the DNA of the above-mentioned (a) under stringent conditions

15 (c) a DNA having at least (1) 60% identity, (2) 70% identity, (3) 80% identity, (4) 90% identity or (5) 95% identity with the nucleotide sequence shown by nucleotide No. 1065 to 3359 in the nucleotide sequence depicted in SEQ ID No. 1.

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9. A gene encoding a protein of the following (a) or (b):

(a) a protein consisting of amino acid number from -1 or 1 to 765 in the amino acid sequence depicted in SEQ ID No. 2

25 (b) a protein having an amino acid sequence involving deletion, substitution or addition of one to several amino acid(s) in the amino acid sequence (a), which protein has a cyclic lipopeptide acylase activity.

30 10. A recombinant vector comprising the gene of claim 8 or 9.

11. An expression vector functionally comprising the gene of claim 8 or 9.

12. A transformant obtained by transforming a host cell with a vector of claim 10 or 11.

13. A method of producing cyclic lipopeptide acylase, which 5 comprises

culturing a host cell transformed with the expression vector of claim 11, and harvesting, from the obtained culture, cyclic lipopeptide acylase capable of catalyzing a reaction to deacylate a 10 side chain acylamino group of a cyclic lipopeptide substance into an amino group.

14. A cyclic lipopeptide acylase produced by the production method of claim 13.

15. 15. A cyclic lipopeptide acylase encoded by a DNA consisting of a nucleotide sequence shown by nucleotide No. 1065 to 3359 in the nucleotide sequence depicted in SEQ ID No. 1.

20 16. A cyclic lipopeptide acylase which is encoded by a DNA having at least (1) 60% identity, (2) 70% identity, (3) 80% identity, (4) 90% identity or (5) 95% identity with the nucleotide sequence shown by nucleotide No. 1065 to 3359 in the nucleotide sequence depicted in SEQ ID No. 1.

25 17. A protein of the following (a) or (b):  
(a) a protein consisting of amino acid No. -1 to 200 in the amino acid sequence depicted in SEQ ID No. 2  
(b) a protein having an amino acid sequence involving 30 deletion, substitution or addition of one to several amino acid(s) in the amino acid sequence (a), which protein forms a complex with the protein of the following (c) or (d) to show a cyclic lipopeptide acylase activity:

(c) a protein consisting of amino acid No. 201 to 765  
in the amino acid sequence depicted in SEQ ID No. 2

(d) a protein having an amino acid sequence involving  
deletion, substitution or addition of one to  
several amino acid(s) in the amino acid sequence

(c), which protein forms a complex with the  
polypeptide of the above-mentioned (a) or (b) to  
show a cyclic lipopeptide acylase activity.

10 18. A protein of the following (c) or (d):

(c) a protein consisting of amino acid No. 201 to 765 in  
the amino acid sequence depicted in SEQ ID No. 2

(d) a protein having an amino acid sequence involving  
deletion, substitution or addition of one to several  
amino acid(s) in the amino acid sequence (c), which  
protein forms a complex with the protein of (a) or (b)  
below to show a cyclic lipopeptide acylase activity:

(a) a protein consisting of amino acid number from -1 or  
1 to 200 in the amino acid sequence depicted in SEQ  
ID No. 2

(b) a protein having an amino acid sequence involving  
deletion, substitution or addition of one to several  
amino acid(s) in the amino acid sequence (a), which  
protein forms a complex with the protein of the  
above-mentioned (c) or (d) to show a cyclic  
lipopeptide acylase activity.

19. A DNA encoding the protein of claim 17.

30 20. A DNA encoding the protein of claim 18.

21. A recombinant vector comprising at least one of claim 19  
and claim 20.

22. An expression vector comprising at least one of claim 19 and 20.

23. A transformant obtained by transforming a host cell with 5 the vector of claim 21 or 22.

24. A method of producing cyclic lipopeptide acylase, which comprises

10 culturing a host cell transformed with the expression vector of claim 22, and

harvesting, from the obtained culture, cyclic lipopeptide acylase capable of catalyzing a reaction to deacylate a side chain acylamino group of a cyclic lipopeptide substance into an amino group.

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25. A cyclic lipopeptide acylase produced by the production method of claim 24.

26. A method for deacylating a side chain acylamino group of a 20 cyclic lipopeptide substance into an amino group, which method comprising culturing a host cell transformed with the expression vector of claim 4, 11 or 22, and bringing the cyclic lipopeptide substance into contact with the obtained culture or a treated product thereof.

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